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United States Senate

WASHINGTON, DC 20510-0504

<http://feinstein.senate.gov>

January 14, 2011

Assistant Secretary Jo-Ellen Darcy
Office of the Assistant Secretary of the Army (Civil Works)
108 Army Pentagon
Washington, DC 20310-0108

Dear Assistant Secretary Darcy:

I am writing to ask you to respond to concerns that were raised by the California Department of Water Resources. The concern revolves around the Army Corps' recent policy that has been outlined in two documents titled, "Process for Requesting a Variance from Vegetation Standards for Levees and Floodwalls" and the associated "Guidelines for Landscape Planting and Vegetation Management at Levees, Floodwalls, Embankment Dams, and Appurtenant Structures," on vegetation management for levee systems.

In the attached paper the California Department of Water Resources outlines several concerns with the Corps' policy, as well as a belief that it could actually jeopardize the public safety in some instances. I would very much appreciate your careful consideration of the ideas in this paper, as I strongly believe that levee systems must be adequate to ensure the protection of the public and essential resources. Given the current, and likely to continue, limited fiscal resources to address the admitted deficiencies in California's levees, I would like to know your thoughts on how the current policy maximizes levee safety while balancing finances and practical implementation issues.

I thank you for your leadership on public protection and flood safety issues, and look forward to your response. If you have any questions, please do not hesitate to call me.

Sincerely,

A handwritten signature in blue ink that reads "Dianne Feinstein".

Dianne Feinstein
United States Senator

Enclosure: White paper from the California Department of Water Resources

DF/lr/apc



THE CORPS' LEVEE VEGETATION REMOVAL POLICY WILL REDUCE PUBLIC SAFETY IN CALIFORNIA

In the wake of Hurricane Katrina, the U.S. Army Corps of Engineers began developing a national policy that would require the removal of most vegetation from levee systems throughout the country. This action is at odds with the fact that vegetation was not the cause of any of the numerous levee and floodwall failures in New Orleans. The most recent descriptions of the Corps' policy are contained in the draft "Process for Requesting a Variance From Vegetation Standards for Levees and Floodwalls--75 Fed. Reg. 6364-68" (VVP) and the associated ETL 1110-2-571 "Guidelines for Landscape Planting and Vegetation Management at Levees, Floodwalls, Embankment Dams, and Appurtenant Structures" adopted April 10, 2009 (ETL). On April 15, 2010, the California Department of Water Resources (DWR) and California Department of Fish and Game (DFG) submitted extensive comments on the VVP and ETL, explaining how the Corps' vegetation management policy will reduce public safety in California, result in extensive and unnecessary environmental damage, and diminish the Corps' responsibility to assist state and local maintaining agencies in ensuring the integrity of California's levee system.

California agrees with the Corps that public safety is the highest priority for flood management. California also agrees that appropriate vegetation management is an important component of levee operations and maintenance. Despite these common goals, California asserts that the Corps' significant new policy will adversely impact public safety. This unintended consequence is due in large part by attempting to address complex technical, financial, legal and institutional problems with a highly prescriptive, "one-size-fits-all" approach to vegetation management. The following is a summary of the negative impacts of Corps vegetation management policy on public safety:

- **Vegetation Poses Low Risk to Levee Safety:** DWR has not seen evidence that well-managed vegetation that allows access for inspection and flood-fighting poses significant risks to levee safety. Conversely, there is a preponderance of direct and observed evidence that seepage, overtopping, erosion, animal burrowing and other failure mechanisms pose the key public safety risks in the Central Valley. DWR is currently conducting an engineering evaluation of 2,100 miles of levees comprising the Central Valley Flood Control System; this study will be completed in December 2012. Preliminary review of performance records indicate that of 329 documented levee failures in the Central Valley, *none* could be attributed to levee vegetation. Furthermore, out of 5,089 documented levee performance incidents (that did not result in failure), only 8 incidents could be associated with vegetation management issues; these reports, however, are outnumbered by numerous accounts attesting to the safety benefits provided by vegetation. While failure mechanisms are often complex, the available evidence indicates that vegetation is not a significant contributor to levee risk.
- **Legacy Levees and Vegetation:** Corps policy fails to distinguish between existing levees (referred to as legacy levees) and new levees. This distinction is germane to an understanding of levee reliability. Most of the legacy levees in California were constructed using methods and materials that are considered unacceptable today. This was the situation when the Corps, in the mid-1950s, turned these levees over to the State of California to operate and maintain, at which time significant vegetation was already pervasive in the system. These legacy levees are strikingly different from new levees that are designed and constructed under modern standards. Over the last few decades, the Corps has integrated woody vegetation in levee designs, even to the extent of requiring the planting of new vegetation. In many cases,

the structural integrity of these legacy levees is now dependent on the soil reinforcement and erosion protection provided by the integrated vegetation. In this context, removing vegetation without thoughtful consideration of these benefits could have disastrous consequences—particularly if implemented in a wholesale manner over many miles of levees as the Corps proposes. A recent example, documented in a 2009 Corps report, is an incident following the 2008 Midwest floods, in which the clear-cutting of trees at the toe of an East St. Louis levee appeared to exacerbate what had been a marginal underseepage problem, as manifested in the formation of sand boils where no sand boils had appeared previously in a much stronger flood.

- **High Cost of Complete Tree Removal:** The extremely high costs of levee construction and mitigation that would be required under the Corps' new proposal would divert limited financial and other resources from the remediation of critical risk factors (e.g., seepage, erosion, overtopping). Because many of the legacy levees have numerous trees and root networks, many levees would have to be completely removed and replaced in order to be in strict compliance with Corps policy. In 2006, California voters approved an unprecedented \$4.9 billion in bond funds to address flood management problems that will take several decades and tens of billions of dollars to fully resolve. DWR estimates that the *minimum* cost of implementing Corps vegetation policy is approximately \$7 billion. In other words, the Corps' proposal would absorb the entirety of the currently available funds, without any demonstrable improvement in public safety, precluding the State from addressing the real risks.
- **Disproportionate Impacts on Rural and Agricultural Communities:** Rural and agricultural communities would be particularly hard-hit. These communities that are responsible for levee maintenance generally lack the resources necessary to meet the heavy financial and environmental obligations that would result from the Corps' vegetation removal requirements. If these local agencies are unable to satisfy the Corps' new requirements, the Corps has indicated that it would then deny these districts further eligibility for rehabilitation assistance under the federal PL 84-99 program. Without this federal financial assistance, damaged levees may not be rehabilitated following a high water event, leaving them vulnerable to failure and actually increasing risks to public safety. And even if the rehabilitation is eventually performed by nonfederal entities, the lack of federal resources to perform the work in a timely manner will increase the risk to public safety, as compared to the current process in which federal and non-federal partners work together to rehabilitate levees as quickly as possible. A final point is that communities removed from the PL84-99 program would no longer be incentivized by this program to perform regular levee maintenance work such as erosion repairs, rodent control, maintenance of closure structures, and flood fight preparation.
- **Corps Vegetation Policy Lacks Scientific Foundation:** The Corps' own independent third-party peer review, conducted by the Battelle Institute in 2008, concluded that: "The policies and guidance lack scientific foundation, as evidenced by broad anecdotal assumptions and the lack of non-USACE literature citations. ..." The agencies of the California Roundtable for Flood Management in the Central Valley, including the Corps, currently are conducting research to determine the extent that woody vegetation may affect the safety of levees. The goal of this program is to collaborate on objective research utilizing scientifically sound methods, and to gain new knowledge or correct and integrate previous knowledge regarding levee vegetation. The Corps should allow this ongoing scientific research to inform its regulatory process before proceeding.
- **System-Wide Approach Needed:** A system-wide approach is needed for the Central Valley Flood Control System in order to optimize flood risk reduction and environmental enhancement objectives. Such a system-wide approach will likely include levee structural and maintenance standards tied to risk of damage to life and property, life cycle management of existing levee vegetation, research, and adaptive management. There is time to craft a more balanced, flexible, and safe set of solutions.